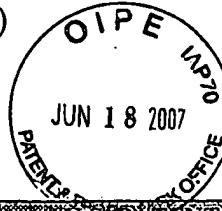


INFORMATION DISCLOSURE  
CITATION IN AN  
APPLICATION  
(PTO-1449)

ATTY. DOCKET NO.  
007734 FPS/MMCS/APCSERIAL NO.  
10/665,165APPLICANT  
Joseph Young J. PAIKFILING DATE  
September 18, 2003

GROUP

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EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
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	5,369,544	11/29/94	Mastrangelo			04/05/93
	5,444,837	08/22/95	Bomans et al.			12/29/93
	5,665,214	09/09/97	Iturralte			05/03/95
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	5,824,599	10/20/98	Schacham-Diamond et al.			01/16/96
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EXAMINER <i>smal</i>			DATE CONSIDERED <i>1/21/2008</i>			

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				APPLICANT Joseph Young J. PAIK		
				FILING DATE September 18, 2003	GROUP	
U.S. PARENT DOCUMENTS						
EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
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<i>dm</i>	6,728,587 B2	04/27/04	Goldman et al.			12/27/00
EXAMINER <i>mact</i>	DATE CONSIDERED <i>1/21/008</i>					

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<b>FOREIGN PATENT DOCUMENTS</b>						
EXAMINER'S INITIALS	PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translation
						Yes
	EP 0 992 195 A1	07/28/99	EP			X
	EP 1 083 470 A2	03/14/01	EP			X
	GB 2 365 215 A	02/13/02	GB			X
<b>OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)</b>						
<p>Sun, S.C. 1998. "CVD and PVD Transition Metal Nitrides as Diffusion Barriers for Cu Metallization." <i>IEEE</i>. pp. 243-246.</p> <p>Tagami, M., A. Furuya, T. Onedera, and Y. Hayashi. 1999. "Layered Ta-nitrides (LTN) Barrier Film by Power Swing Sputtering (PSS) Technique for MOCVD-Cu Damascene Interconnects." <i>IEEE</i>. pp. 635-638.</p> <p>Yamagishi, H., Z. Tokei, G.P. Beyer, R. Donaton, H. Bender, T. Nogami, and K. Maex. 2000. "TEM/SEM Investigation and Electrical Evaluation of a Bottomless I-PVD TA(N) Barrier in Dual Damascene" (Abstract). <i>Advanced Metallization Conference 2000</i>. San Diego, CA.</p> <p>Eisenbraun, Eric, Oscar van der Straten, Yu Zhu, Katharine Dovidenko, and Alain Kaloyeros. 2001. "Atomic Layer Deposition (ALD) of Tantalum-Based Materials for Zero Thickness Copper Barrier Applications" (Abstract). <i>IEEE</i>. pp. 207-209.</p> <p>Smith, S.R., K.E. Elers, T. Jacobs, V. Blaschke, and K. Pfeifer. 2001. "Physical and Electrical Characterization of ALD Tin Used as a Copper Diffusion Barrier in 0.25 <math>\mu</math>m, Dual Damascene Backend Structures" (Abstract). <i>Advanced Metallization Conference 2001</i>. Montreal, Quebec.</p> <p>Kim, Y.T. and H. Sim. 2002. "Characteristics of Pulse Plasma Enhanced Atomic Layer Deposition of Tungsten Nitride Diffusion Barrier for Copper Interconnect" (Abstract). <i>IEIC Technical Report</i>. Vol. 102, No. 178, pp. 115-118.</p> <p>Elers, Kai Erik, Ville Saanila, Pekka J. Soininen, Wei-Min Li, Juhana T. Kostamo, Suvi Haukka, Jyrki Juhanoja, and Wim F.A. Besling. 2002. "Diffusion Barrier Deposition on a Copper Surface by Atomic Layer Deposition" (Abstract). <i>Advanced Materials</i>. Vol. 14, No. 13-14, pp. 149-153.</p> <p>Peng, C.H., C.H. Hsieh, C.L. Huang, J.C. Lin, M.H. Tsai, M.W. Lin, C.L. Chang, Winston S. Shue, and M.S. Liang. 2002. "A 90nm Generation Copper Dual-Damascene Technology with ALD TaN Barrier." <i>IEEE</i>. pp. 603-606.</p> <p>Van der Straten, O., Y. Zhu, E. Eisenbraun, and A. Kaloyeros. 2002. "Thermal and Electrical Barrier Performance Testing of Ultrathin Atomic Layer Deposition Tantalum-Based Materials for Nanoscale Copper Metallization." <i>IEEE</i>. pp. 188-190.</p> <p>Wu, Z.C., Y.C. Lu, C.C. Chiang, M.C. Chen, B.T. Chen, G.J. Wang, Y.T. Chen, J.L. Huang, S.M. Jang, and M.S. Liang. 2002. "Advanced Metal Barrier Free Cu Damascene Interconnects with PECVD Silicon Carbide Barriers for 90/65-nm BEOL Technology." <i>IEEE</i>. pp. 595-598.</p> <p>July 25, 2003. International Search Report for PCT/US02/24858.</p> <p>March 30, 2004. Written Opinion for PCT/US02/19062.</p> <p>April 9, 2004. Written Opinion for PCT/US02/19116.</p> <p>April 22, 2004. Office Action for U.S. Serial No. 09/998,372, filed November 30, 2001.</p>						
EXAMINER <i>maeda</i>	DATE CONSIDERED 12/1/08					

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APPLICANT Joseph Young J. PAIK			
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(OTHER) ART (Including Author, Title, Date, Pertinent Pages, Etc.)			
<del>April 28, 2004. Written Opinion for PCT/US02/19117.</del>			
<del>April 29, 2004. Written Opinion for PCT/US02/19061.</del>			
<del>May 5, 2004. Office Action for U.S. Serial No. 09/943,955, filed August 31, 2001.</del>			
<del>May 5, 2004. International Preliminary Examination Report for PCT/AJS01/27406.</del>			
<del>May 28, 2004. Office Action for U.S. Serial No. 09/943,383, filed August 31, 2001.</del>			
<del>June 3, 2004. Office Action for U.S. Serial No. 09/928,474, filed August 14, 2001.</del>			
<del>June 23, 2004. Office Action for U.S. Serial No. 10/686,589, filed October 17, 2003.</del>			
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<del>July 12, 2004. Office Action for U.S. Serial No. 10/173,108, filed June 8, 2002.</del>			
EXAMINER: <i>huat</i>		DATE CONSIDERED <i>1/21/08</i>	

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U.S. PAPERENT DOCUMENTS						
EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
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	6,230,069 B1	05/08/01	Campbell et al.			06/26/98
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	6,334,807 B1	01/01/02	Lebel et al.			04/30/99
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	Burke, Peter A. June 1991. "Semi-Empirical Modelling of SiO <sub>2</sub> Chemical-Mechanical Polishing Planarization." <i>VMIC Conference, 1991 IEEE</i> , pp. 379-384. IEEE.					
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EXAMINER	DATE CONSIDERED <i>Chen</i> 12/10/08					

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<b>U.S. PATENT DOCUMENTS</b>							
EXAMINER'S INITIALS	PATENT NO.	DATE	NAME		CLASS	SUBCLASS	FILING DATE
<i>JM</i>	3,205,485	09/07/65	Noltingk				10/21/60
	3,229,198	01/11/66	Libby				09/28/62
	3,767,900	10/23/73	Chao et al.				06/23/71
	3,920,965	11/18/75	Sohrwardy				03/04/74
	4,000,458	12/28/76	Miller et al.				08/21/75
	4,207,520	06/10/80	Flora et al.				04/06/78
	4,209,744	06/24/80	Gerasimov et al.				03/27/78
	4,302,721	11/24/81	Urbanek et al.				05/15/79
	4,368,510	01/11/83	Anderson				10/20/80
	4,609,870	09/02/86	Lale et al.				09/13/84
	4,616,308	10/07/86	Morshed et al.				12/02/85
	4,663,703	05/05/87	Axelby et al.				10/02/85
	4,698,766	10/06/87	Entwistle et al.				05/17/85
	4,750,141	06/07/88	Judell et al.				11/26/85
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	4,901,218	02/13/90	Cornwell				03/04/88
	4,938,600	07/03/90	Into				02/09/89
	4,967,381	10/30/90	Lane et al.				07/06/89
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	5,226,118	07/06/93	Baker et al.				01/29/91
	5,231,585	07/27/93	Kobayashi et al.				06/20/90
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<i>JM</i>	5,260,868	11/09/93	Gupta et al.				10/15/91
EXAMINER <i>JM</i>			DATE CONSIDERED <i>1/21/2008</i>				

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<b>U.S. PATENT DOCUMENTS</b>				
EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS
<i>JM</i>	5,270,222	12/14/93	Moslehi	
	5,283,141	02/01/94	Yoon et al.	
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<i>JM</i>	5,541,510	07/30/96	Danielson	
EXAMINER <i>Marta</i>	DATE CONSIDERED <i>12/1/2003</i>			

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EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
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<i>Am</i>	5,740,429	04/14/98	Wang et al.			07/07/95
EXAMINER <i>Maet</i>				DATE CONSIDERED <i>1721/2008</i>		

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EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
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INFORMATION DISCLOSURE  
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(PTO-1449)

ATTY. DOCKET NO.  
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SERIAL NO.  
10/665,165

APPLICANT  
Joseph Young J. PAIK

FILING DATE  
September 18, 2003

GROUP

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EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
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INFORMATION DISCLOSURE CITATION IN AN APPLICATION (PTO-1449)			ATTY. DOCKET NO. 007734 FPS/MMCS/APC	SERIAL NO. 10/665,165		
			APPLICANT Joseph Young J. PAIK			
			FILING DATE September 18, 2003	GROUP		
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EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
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EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
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EXAMINER			DATE CONSIDERED			
<i>J Mac</i>			<i>12/1/2002</i>			

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			APPLICANT Joseph Young J. PAIK			
			FILING DATE September 18, 2003	GROUP		
U.S. PATENT DOCUMENTS						
EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
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EXAMINER	<i>MW</i>		DATE CONSIDERED	<i>1/21/2005</i>		

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EXAMINER'S INITIALS	PATENT APP. NO.	FILING DATE	NAME	TITLE	CLASS	SUB-CLASS
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	09/637,620	08/11/00	Chi et al.	Generic Interface Builder		
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EXAMINER <i>Chae</i>				DATE CONSIDERED <i>1/21/08</i>		

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EXAMINER <i>Marie</i>				DATE CONSIDERED <i>9/21/08</i>		

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						Yes	No
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	01-283934	11/15/89	Japan			X	
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	3-202710	09/04/91	Japan			X	
	05-151231	06/18/93	Japan			X	
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	06-110894	04/22/94	Japan			X	
	06-176994	06/24/94	Japan			X	
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	8-23166	01/23/96	Japan			X	
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EXAMINER'S INITIALS	PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
				Yes		No	
	EP 0 869 652 A2	10/07/98	Europe			X	
	WO 98/45090	10/15/98	WO			X	
	EP 0 877 308 A2	11/11/98	Europe			X	
	EP 0 881 040 A2	12/02/98	Europe			X	
	EP 0 895 145 A1	02/03/99	Europe			X	
	WO 99/09371	02/25/99	WO			X	
	11-67853	03/09/99	Japan			X	
	EP 0 910 123 A1	04/21/99	Europe			X	
	11-126816	05/11/99	Japan			X	
	11-135601	05/21/99	Japan			X	
	WO 99/25520	05/27/99	WO			X	
	EP 0 932 194 A1	07/28/99	Europe			X	
	WO 99/59200	11/18/99	WO			X	
	WO 00/00874	01/06/00	WO			X	
	WO 00/05759	02/03/00	WO			X	
	WO 00/35063	06/15/00	WO			X	
	2000-183001	06/30/00	Japan			X	
	WO 00/54325	09/14/00	WO			X	
	GB 2 347 885 A	09/20/00	United Kingdom			X	
	WO 00/79355 A1	12/28/00	WO			X	
	EP 1 066 923 A2	01/10/01	Europe			X	
	EP 1 067 757 A1	01/10/01	Europe			X	
	EP 1 071 128 A2	01/24/01	Europe			X	
	WO 01/11679 A1	02/15/01	WO			X	
	WO 01/15865 A1	03/08/01	WO			X	
	WO 01/18623 A1	03/15/01	WO			X	
EXAMINER <i>lisa</i>	DATE CONSIDERED <i>4/21/08</i>						

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INFORMATION DISCLOSURE  
CITATION IN AN  
APPLICATION  
(PTO-1449)

ATTY. DOCKET NO.  
007734 FPS/MMCS/APC

SERIAL NO.  
10/665,165

## APPLICANT

Joseph Young J. PAIK

## FILING DATE

September 18, 2003

## GROUP

## FOREIGN PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						Yes	No
	2001-76982	03/23/01	Japan			X	
	WO 01/23863 A1	04/12/01	WO			X	
	EP 1092 505 A2	04/18/01	Europe			X	
	WO 01/33277 A1	05/10/01	WO			X	
	WO 01/33501 A1	05/10/01	WO			X	
	434103	05/16/01	Taiwan			X	
	436383B	05/28/01	Taiwan			X	
	WO 01/52055 A3	07/19/01	WO			X	
	WO 01/52319 A1	07/19/01	WO			X	
	WO 01/57823 A2	08/09/01	WO			X	
	455938B	09/21/01	Taiwan			X	
	455976	09/21/01	Taiwan			X	
	2001-284299	10/12/01	Japan			X	
	WO 01/80306 A2	10/25/01	WO			X	
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	EP 1 072 967 A3	11/21/01	Europe			X	
	2002-9030	01/11/02	Japan			X	
	EP 1 182 526 A2	02/27/02	Europe			X	
	WO 02/17150 A1	02/28/02	WO			X	
	WO 02/31613 A2	04/18/02	WO			X	
	WO 02/31613 A3	04/18/02	WO			X	
	WO 02/33737 A2	04/25/02	WO			X	
	WO 02/074491 A1	09/26/02	WO			X	
	2002-343754	11/29/02	Japan			X	

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DATE CONSIDERED

12/10/02

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		APPLICANT Joseph Young J. PAIK	
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EXAMINER <i>luasf</i>	DATE CONSIDERED <i>1/21/08</i>		

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EXAMINER <i>hMaet</i>	DATE CONSIDERED 1/21/08		

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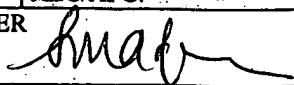
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